

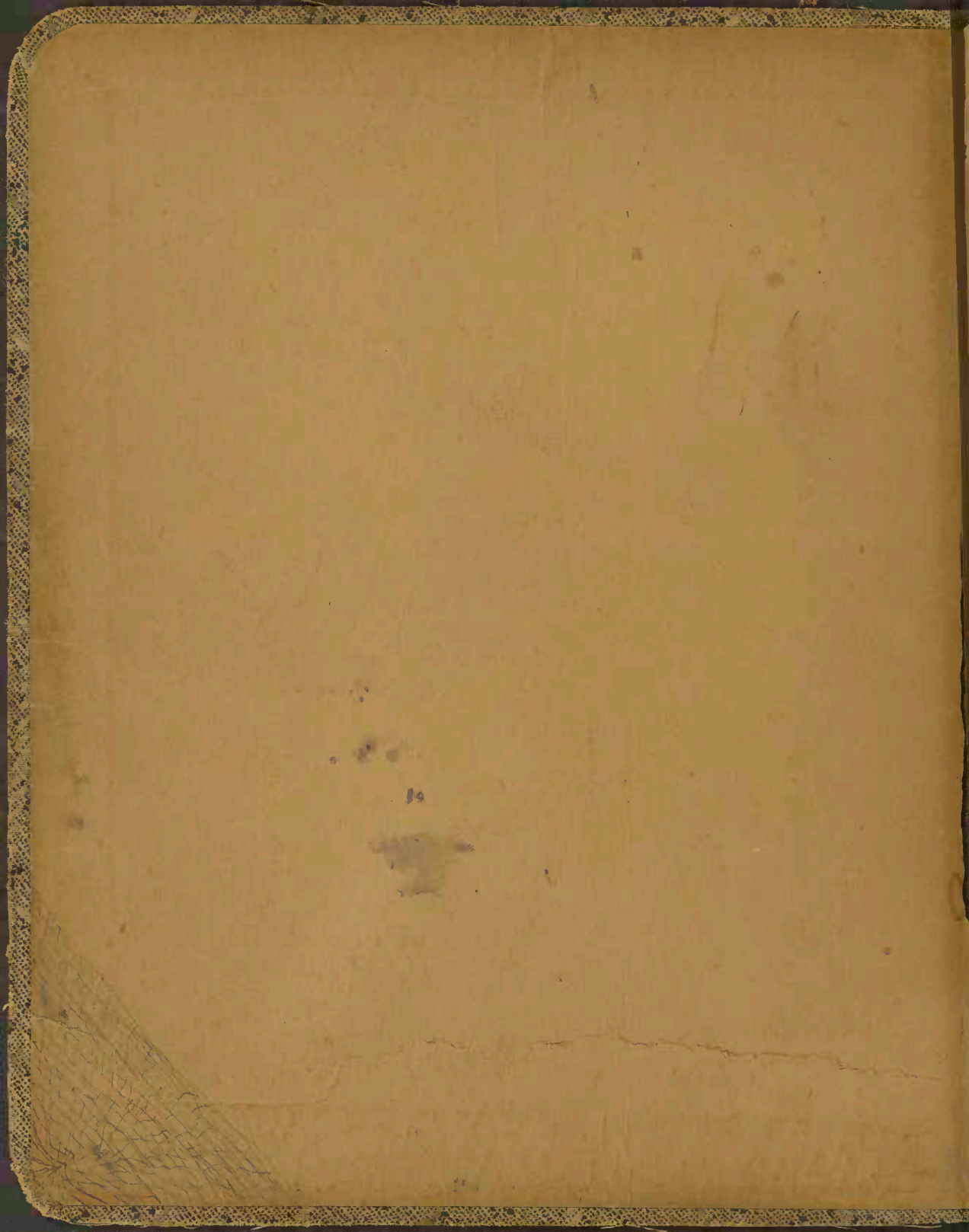
## **Historic, archived document**

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Sanitary Medicine

Exercise  
Folio





N<sup>o</sup> 2 Michener's Liment

<sup>TR</sup>  
Dil. Acid Acetic or Vinegar Oj

Whites of eggs

Shaken well together

Spt to Rect Oj

Spt to Turpentine 3 XIV

Camphorae 3i

Mix Spt & camph, then Turpentine and  
add acid & egg mixture to this -

Pour this into acid & egg mixture.

Chlor. Hydrate splendid for colic

Ammon. Carb. dissolved in 1/2 cup water

+ put in 1/2 pail water - for pneumonia Dr. Gadsden

For capillary bronchitis in children.

R Pot. Bicromat. grs. i

Sugar of milk " IX

Aqua " 3 XX

1/2 teaspoonful every 10 minutes until symptoms  
modified. Then every hour.

21400



Notes on —

Lectures - delivered to the students of the National Vet. - College, first lecture commencing Oct 25, 1892. (Prof. D. E. Salmon)

(1) Sporadic - a disease which may spread but is not epidemic

(2) Enzootic prevailing over a certain section at a time

(3) Epizootic prevailing over an extensive territory

(4) Panzootic disease affecting all animals at a time ex Anthrax &

(5) The highest loss from restriction on animals, <sup>(cattle)</sup> shipped to foreign countries was \$25,000,000

Before prohibition was put upon shipments of pork 1,200,000,000 lbs were sent to foreign countries per year. It shrunk to 626,000,000 lbs after the restrictions. There was a lost trade of 50,000,000 during the prohibition.

The shipments now take place without any restriction

— " — " Oct. 28, 1892 — " — " — "

- (1) Synonyms are different names applied to the same disease  
 ex. Texas fever called Dystemper in Va. and Murrain in the Southern States.
- (2) History or origin, where the disease was contracted.
- (3) Symptoms, are all morbid phenomena accompanying the disease
- (4) Pathognomonic, a term applied indicative of a particular disease or one that distinguishes it from other similar diseases

ex. Vesicles of Variola or foot & mouth disease

- 4) Clinical History a study of the symptoms when the patient is present. — Periods —

(a) Incubation from the time the animal is exposed until the disease appears

- (2) Invasion when it makes itself apparent by a rise of temp. &c
- (3) Augmentation or Increase when the disease is more marked
- (4) Culme or Violence when the disease is at its highest point
- (5) Decline when it disappears.

Pathological Anatomy consists of all the anatomical changes or lesions seen on P.M.

In Epizootic diseases the changes are <sup>(1)</sup> congestion and <sup>(2)</sup> Inflammation.  
The results of the above phenomena are:-

I Hemorrhage, the flowing of blood from broken or wounded vessels

(a) Petechia (flea bite) small spots of extravasation not above the skin

(b) Infarction The plugging of a vessel by an embolus.

II Effusion escape of fluids into cavities - means flowing out,



III Hyper secretion - ex-nasal secretion of Glanders.

IV Ulceration, molecular death  
Ex - Ulcer in intestines in hog cholera

V Necrosis death of a part  
Gangrene " + decomposition of a part.

VI Hyperplasia (moulding) a new formation Ex - Tubercles of Glanders

VII Degeneration, a breaking down -  
Ex. Blood in Anthrax.

Etiology or cause -

(a) External parasites Ex - mange

(b) Internal " or Entozoa


(c) Protozoa lowest forms of animal life - Ex Texas fever only known disease in U.S. caused by protozoa


(d) Fungi, an order of plants consisting of juxtaposed cells without chlorophyll

(e) Bacteria lowest forms of vegetable life

## (c) Bacteria

I { micrococcus      ○○○○  
    streptococcus    ○○○○○○  
    Diplococcus      ○ ○

II Bacillus or rods,  which may divide by fission or spore formation when the nutriment is all used up. The spores are called the resting stage of the germ

III Spirillum or cork screw  also grow as do the bacillus

P. V

Best known treatment for Actinomyccis is Pot. Iod

gpt

— " — " Nov 1, 1892 — " — "

## Sanitary Treatment of Disease

1. Isolation
2. Disinfection, destruction of  
germs by chemical agents

Corros 1 to 500 or 1 to 1000

Sulph Acid good if for use  
around dairies or where inodor-  
ous disinfectants are wanted

The walls should be scraped & wash-  
ed & all debris removed from the  
buildings

Fumigation sometimes used.

Quarantine involves,

(a) Inspection of all animals going into,  
coming from or being slaughter-  
ed in an infected district

And before any of the above steps  
can be taken a permit must  
be obtained from the sanitary officer



(5) Occision or Slaughter is the best way to stop the progress of the disease.

(a) Seizure before slaughter is made

(b) Condemnation

(c) Appraisers sometimes by state law & sometimes by national law. Two appraisers who are paid a salary are called in, and if they can't agree a third

(d) A place of Slaughter is select which is not so difficult in the country as the city. In the latter place they are generally taken to the slaughter house, killed & healthy ones taken for food the diseased, steamed & dressed & used for fertilizer

(e) Indemnity or Compensation -

Owners are compensated for destruction of their buildings.

# (6) Quarantine of premises and restocking-

The period of quarantine depends upon the virulence of the disease and the surroundings

## (7) Inoculation -

If an animal recovers from inoculation it obtains immunity.

But this is not a good method of eradicating the disease. It has been practised for eradication of contagious pleura pneumonia, by inserting some exudate from a lung into the loose connective tissue of the tail. But for eradication it is not successful.

" " - Nov. 4, 1892 - " - " - " - "

Inspection & quarantine of Imported & Exported animals -

Found in Rules & Regulations of U. S. Depart. of Agriculture - rec'd from Dr. Salmon.

" — " — " Nov 10, 1892 — " — " — "

Virus, a poison causing a morbid process or disease

Immunity, a condition of an organ or body whereby it resists the development of infectious or morbid processes.

(1) Acquired Immunity from a previous attack or a modified form of disease

(2) Natural Immunity - natural resistance of the tissues or system;

(3) Congenital Immunity from birth.  
(Tri-Chlor-Iodine said to produce immunity or cure Tetanus)

Pathogenic or disease producing germs gain access to the system by the "Alimentary Tract

(2) Respiratory "

(3) Other mucous membrane

(4) Skin wounds.



The effects produced by Bacteria are:-

- (a) Thrombosis, causing hemorrhage &c.
- (b) Chemical poisoning by-

(1) Proteins or toxins

(2) Ferments or toxalbumins

Toxins in the blood produce toxæmia  
 Toxalbumins " " " toxalbuminæ-  
 mia

I Contagion to come in contact

(a) mediate contagion, contact with  
 infected or exposed objects

II Infectious, carried by air

— " — " — Nov, 11, 1892 — "(place of Dr Ch. B. M.)

**Pyæmia.**—

Synonyms.—Pyohæmia, pyogenic fever  
 or purulent infection of blood.

The word pyæmia signifies pus in  
 the blood, and the name was given  
 before the pathology was well known.  
 Pus is a yellowish matter occurring  
 on the surface of wounds

It is formed of liquor puris, which is a thin colorless fluid, and pus cells or corpuscles.

Pyæmia is a disease resulting from the entrance of germs into the blood, which become disseminated and cause metastatic abscesses.

### Symptoms. -

Sudden appearance of fever, depression of spirits, loss of appetite, increased thirst, tumultuous heart beats, small pulse, mucous membranes injected, fast breathing, irregular movements in locomotion, expression of anguish. The fever may be irregular ranging from  $107^{\circ}$  to below normal.

And a recurrence of the fever symptoms as above described, after a day or so of apparent improvement.

The wound changes in appearance from a healthy to a dark or

violet color. The flow of pus becomes less in amount, thin and glairy. The healthy granulations almost disappear.

As the disease advances a discharge from the nose <sup>may</sup> occur - at first serous and becoming purulent later. Abscesses may form in any part of the body producing special symptoms, according to the organ affected, as Icterus, pneumonia, lameness from abscesses in joints, Encephalitis etc. We have two forms of pyaemia.

- (a) Specific - example - strangles
- (b) Simple from absorption of germs from wounds.

### Etiology -

by - Staphylococcus albus  
 " aureus  
 Streptococcus pyogenes  
 Micrococcus



Pyæmia only occurs after healing has commenced. The essential conditions being a broken surface of bone or broken veins.

A thrombus or clot forms in a vein, germs invade it, then follows softening of the plug and dissemination of the broken particles causing metastatic abscesses to form

Pathological Anatomy -

Metastatic abscesses are found in various parts, most commonly in the lungs and to a less extent in the liver, kidneys and spleen.

Pathological Physiology -

The first germ producing disease was discovered by Pasteur in 1878.

White corpuscles migrate to a wound, the vein walls become weakened, the thrombus breaks up, and the parts containing micro organisms are disseminated, causing the formation of abscesses.

## Treatment. -

Is not satisfactory, the main point however being to support the animal by stimulants and nourishing foods.

- " - " - " - Nov 15, 1892. - " - " - "

## Septicaemia. -

Synonyms. - septic infection, putrid infection, & putrid fever.

is a disease in which the blood is invaded by micro organisms which cause enlargement of the spleen, kidneys and etc. also a breaking down of the blood.

There are two forms of septicaemia. A specific form as in anthrax &c. And a simple form which will be considered here.

The <sup>constitutional</sup> symptoms of the simple form resemble those of pyaemia very much but generally in an aggravated form. In addition the escape of haemoglobin

into the urine is seen, and is called Haemaglobinuria. When the blood escapes it is called Haematuria.

This form usually occurs from wounds or abrasions. And may be caused by some germs that produce pyaemia.

The reasons why this disease is produced, instead of pyaemia, are:-

- (1) There is a greater virulence of the germs.
  - (2) The susceptibility of animals varies.
  - (3) A greater number of germs enter the system.
- A) Spontaneous Septicaemia originates from pneumonia & etc.
- B) Traumatic septicaemia, from wounds.
- Pathological Anatomy.-

The blood loses its coagulability, and germs are seen in it when examined with a microscope.

Fatty degeneration occurs, the muscles having the appearance of boiled flesh. Petechiae of the membranes is seen.





## Malignant Oedema.-

Is a disease caused by a small spore bearing <sup>(miasmatic)</sup> bacillus infecting a wound. The bacilli is -anaerobic (cannot live in O) and described by Pasteur as a septic vibrio. The germ exists in rich garden soil; the difference between it, and the germ of charbon is: The latter has square ends, and is thicker and larger. While the former has round ends and is thin.

It produces disease by entering a fresh wound, or being injected into the connective tissues. But cannot do so by penetrating the skin or a granulated wound. Nor by entering the blood stream. As the oxygen destroys the germ. They are seen in the intestines during health and may penetrate an ulcer or wound in the intestinal tract and produce

the disease. After death the segments of the germ grow long.



And in about two months the virulence of the germ is lost if the animal body putrifies. If the body dries up before putrefaction the germ retains its vitality. They are very resistant to heat and antiseptics. It requires a sol. of 1 to 500 of corros. sub. to destroy them.

### Symptoms.

Oedema with a collection of gas is produced. The temperature rises, the subcutaneous tissue being infiltrated with a reddish yellow liquid. The swelling resembles charbon. But may be differentiated, by Charbon not resulting from a wound.

Also from pyaemia, from the kidneys & liver not being affected.



The wound has a gangrenous zone surrounding it.

Treatment —

Open the swellings and allow the germs etc to drain out, and use antiseptics

Puncture with the actual cautery and inject iodine

— " — " — Dec 6, 1892 — " — "

# Strangles

Synonyms

English, Distemper -

French, La Gournie

German, Druse

This is an acute <sup>contagious</sup> infectious disease affecting the horse, ass, & mule.

It is most frequently seen in young horses, and in those brought from the country to the city and in cold weather.

Etiology

It is due to a streptococcus. And susceptible animals contract it by coming in contact with the germ, which is often carried by the nasal secretions and may also be carried by the air. The incubative period is from 4 to 8 days.

Symptoms -

Temperature elevated sometime as high as  $106^{\circ}\text{F}$ . Acute catarrh of nasal

muscular membrane from both sides. A characteristic abscess forms generally in the maxillary space.

Eruptions sometimes occur. These resemble pustules sometimes + again like the eruption of Urticaria. This eruption rapidly appears and then disappears rapidly again.

The period of duration when normal is from two to three weeks.

The irregular forms are characterized by the formation of metastatic abscesses along the course of the lymphatics of the trachea and in different parts of the body.

### Pathological Physiology

The germ may gain access by the nasal mucous membrane or by the intestinal tract, and then into the blood from there.

### Prognosis

is generally favorable when

it runs a regular course.

But if the patient is weak and the irregular form occurs it is very often fatal.

### Treatment -

Give good ventilation, good food and a constant temperature. Encourage the formation of abscesses by poulticing or a blister and then open them. If near the great vessels it is better to tear the tissues with the finger - The following treatment is recommended -

### Carlsted Salt -

Sod Sulph.	grams	75
" Chlor	"	20
" Bi Carb	"	5

### Electuary -

Sod Sulph	grams	250
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Antimony	Blk	"	25
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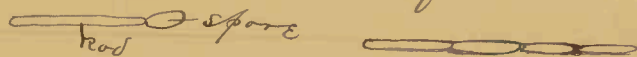
Licorice root & treacle to form an electuary.



" - " - Dec, 9, 1892, - " - " - "

Tetanus or Lock jaw -

This is an infective disease caused by a bacillus, which finds its way to the tissues by means of a wound, it multiplies locally, producing poisonous chemical substances, which are diffused throughout the system causing disease characterized by various contractions of the muscles.



The bacillus producing tetanus is an obligatory anaerobic germ. It is found in rich garden soil, manure dust &c. It is widely diffused to all parts of the world, resists the effects of putrefaction for a long period and grows best at a temperature of  $36$  to  $38^{\circ} \text{C}$ . It is said to be slightly motile in liquids and produces disease by entering a surface

generally, multiplies and produces alkaloidal poisons, which enter the blood stream, The germs do not enter the stream if so they are destroyed by the O in the blood. All animals are attacked by it but it is most common in the horse, ass & mule, and is most commonly seen in warm climates

3 poisonous alkaloids have been isolated by Brigger as follows:-

- (1) Tetanin
- (2) Tetanotoxin
- (3) Spasmatoxin

Two forms of tetanus are described-

1<sup>st</sup> Infectious, due to the above germs

2<sup>nd</sup> Toxic " " strychnine, thebaine &c

Symptoms of the first or infectious form, and classification

(1) Trismus when the spasms are confined to the muscles of mastication

- (2) Orthotonus when the body is rigid and straight
- (3) Opisthotonus when it is curved, the curvature being down.
- (4) Pleurothotonus when the head is curved to one side.

### Symptoms -

Protrusion of the membrana nictitans from retraction of the eye ball  
 Tail raised horizontally, great hyper-  
 thesia when touched or excited, & the  
 production of spasms by so doing.

The pulse or temperature are not materially changed. Cyanosis is noticed from the lungs not acting properly which produces the non oxygenation seen by examination of the visible mucous membrane. The feces and urine are retained by non action of the organs in which they occur

The larger proportion of dogs recover from tetanus

## Treatment. -

Remove the animal from excitement, place in slings, give liquid food and remove the forces and urine. Chlor. Hydrate, Morphia and Selsennium are recommended.

And Tri. Chlor. Iodine is a good germicide in this disease

Immunity is produced by the virus weakened by Tri Chlor Iodi, which is injected hypodermically. Blood serum taken from animals inoculated with the above and injected into those affected with the disease in the first stage, is said to have checked it

Antitoxin is the substance which neutralizes the effects produced by the germ.



" — " Dec., 15, 1892 — " — "

# Anthrax

Synonyms. — Anthrax Fever,  
Carbunculus Anthrax, Splenic Apoplexy.  
French — Charbon or Sang de Rate  
German — Miltzbrand or Karbun-  
KellKrafheit —

Latin — Ignis sacer or Pustula  
maligna.

Anthrax is a miasmatic non-  
contagious disease, due to an aerobic  
germ, which gains access <sup>to the system</sup> by the  
mucous or other tract; and causes  
either a local or general disease,  
and local symptoms or death.

It was definitely demonstrated  
by Koch in 1876 that the disease was  
caused by the bacillus anthracis.

The bacillus has very square  
ends and is constricted in the middle  
and when seen in the blood seems

two or three times the diameter of the corpuscles. This is not however the case, as in this condition, the bacillus consists of two or three segments and appears as one.

It multiplies by division, the segments grow long & again subdivide. When outside of the body and in the proper media the filaments grow very long. ~~It~~ The germ grows on various culture media, such as gelatine agar agar, potato &c. It appears unable to grow in distilled water, but multiplies rapidly in moisture containing organic matter. It is destroyed in a week or so, by desiccation owing to the absence of oxygen. From the same cause also spores do not form in the dead animal.

Cold has very little effect on the vigor or vitality; it grows best however at a temperature of  $35^{\circ}\text{C}$  and

not above  $55^{\circ}\text{C}$ . Attenuation is produced by heating at a temperature of  $55^{\circ}\text{C}$  for 15 minutes.

When nourishment is all gone, and the temperature and other conditions are not favorable, the bacillus dries up & leaves a spore to prolong its life. The spore is very resistant, & may retain its vitality for 8 or 10 years, and form a new bacillus.

Neither water or boiling has any effect on the spore. It may however be destroyed by corros-sub. 1 to 1000 in 15 minutes.

Anthrax may be produced by the germ entering the system, by the respiratory or alimentary tract, the skin, or other membranes lining the openings of the body.

In cattle it is generally produced by the ingestion of forage containing

spores. The spores germinate & form rods in the intestine, which pass into the blood. In addition it is produced in horses by entrance through the skin. And by the latter means produces External Anthrax or Malignant Pustule, which is usually sporadic.

Anthrax Fever or Splenic Apoplexy is generally confined to a locality, the germ being taken in with the coarse forage.

The disease is rarely produced by inhalation, but when it is the bacillus passes through the membranes & into the lymphatics.

The germs produce their effects "mechanically by plugging vessels, & <sup>(2)</sup>chemically by producing poisonous alkaloids.



" — " — Dec. 17, 1892. — " — " — " 31

Anthrax may be either sporadic, enzootic or epizootic. The soils most favorable for its propagation are: (1) a black loose & rich one rich in organic matter. (2) Lime marl and clay with organic matter. (3) A swampy or low land. The disease usually occurs during warm weather, when the soil water is lowest. It is observed most commonly, first in cattle & secondly in sheep & goats. Carnivora generally contract it by eating the cadaver. Fish and amphibia are said to be somewhat susceptible. A slight attack confers immunity for a short period.

The disease is most commonly seen in districts where part of the land is inundated for part of the year, the outbreak occurring when the land is drying. Frequently seen along the Miss. river, Nile and Danube

# Pathological Anatomy

1<sup>st</sup> Hemorrhage in any part of the body

(2<sup>nd</sup>) A Gelatinous bloody infiltration, which may be yellow, transparent or streaked with blood, the mass resembling domestic gelatine when prepared for dessert. The character of the infiltration is a pathognomonic lesion of this disease.

(3<sup>rd</sup>) The spleen is almost always unnaturally enlarged being sometimes twice the natural size.

(4) The blood generally black, not coagulable and resembling tar

(5) Presence of Bacillus anthracis - which is easiest found in the capillaries of the spleen and liver

The black farry blood is generally found in and beneath the skin, the hemorrhages in loose connective tissue, in the muscles, which are dark red and friable, and on serous membranes. The gelatine occurring in masses in the loose connective tissue generally in the neck around the trachea.

Intestines badly congested.

Endocardium stained a dark red color from a breaking down of the blood;

The spleen may be uniformly enlarged or have large tumors

The intestinal contents bloody  
The Lungs ecchymosed & odematous  
trachea & bronchi contain bloody mucus

Brain congested.

Bones marked by bloody layers

Always Haematuria

The Blood does not regain its red color when brought to the light.  
Poikilocytosis an irregularity in the shape of the red blood corpuscles.  
Leucocytosis a transient increase in the number of white corpuscles.  
 The carcass loses heat slowly after death, body swells enormously, rigor mortis incomplete, decomposition rapid and a discharge from the mouth, nose and anus of bloody mucus.

In the apoplectic form a great many of these lesions are absent.

Symptoms—

Invasion sudden and rapid in all forms, fever high, petechial ~~discrete~~ mucous membranes, swellings on the body. The symptoms vary somewhat according to the organ affected. Death generally occurs in from 1 to 3 days.



3 forms of Anthrax -

1st - Acute

2nd Sub acute

3rd Apoplectic or Splenic Apoplexy

Symptoms of The Apoplectic form -

The animal may be taken suddenly ill when eating or moving about and die immediately or in from 3 to 5 minutes. This form is most common in sheep.

When cattle die from this form it is generally the fat ones and at the beginning of an outbreak.

Symptoms of The Acute form

Develops in from 10 to 24 hrs, temperature from  $104$  to  $108^{\circ}\text{F}$ , bellowing, and convulsions and bloody discharges. May have pulmonary instead of brain symptoms, Glander's invisible mucous membranes of the head.

convulsions wastefulness of gait and death from asphyxia

The animal may show signs of improvement and the symptoms return with greater severity and death ensue. This form is known as Intermittent Anthrax.

(3) Sub Acute, (symptoms of)

The symptoms develop less rapidly and terminate in from 1 to 7 days

Horses show colicky pains and recoveries are much more common in this form. Malignant pustule is caused by the invasion of the bacilli themselves.

Both forms may be produced by feeding spores or inoculating rods under the skin

## Malignant Pustule -

The swellings are at first hard, and warm, circumscribed and afterwards become soft and doughy to the touch. The period of incubation being from 5 to 7 days. In this form of Anthrax a cure may be effected. Sores may occur in places far from the seat of inoculation.

When tumors occur in the mouth the disease is known as Gloss anthrax. When in the larynx or pharynx as . . . They are rarely seen in the rectum, but when it does, it causes severe straining and death follows in 12 or 24 hrs.

Cattle most frequently die of Anthrax or Splenic Apoplexy, less frequently of the Carbuncular form. Sheep most commonly of the apoplectic form.

## Diagnosis of Anthrax -

Finding the bacillus sure one. It differs from that of malignant Oedema in that it is not so motile. The M. Oedema germ is longer and has rounded ends.

The Blk Quarter germ may also coexist but it is shorter thicker & has rounded ends and is anaerobic.

The location of an animal will help in the diagnosis. The temperature runs much higher than in any other pulmonary disease.

## Prognosis -

In the apoplectic form all die. Other forms average from 70 to 80 %



" — " Dec 20 1892 — " — "

## Treatment—

Prophylactic treatment is the most important. The carcasses must be destroyed by burning, steaming or be buried at least 6 ft deep and in the most secluded places. And the buildings and effected places thoroughly disinfected. The most satisfactory disinfectant being corros. sublimate 1:1000 which is strong enough to destroy spores.

Wet lands should be drained and animals kept away from the effected localities. When an outbreak occurs the animals should be moved at least a mile if possible.

Creoline in 2 to 4 dr. doses is recommended. Sol. corros. sub 1 to 10,000 hypodermically near the swellings, Or a sol of Iodine as follows.

Iodine	30 (pts.)	} gm
d. Pot.	30 "	
aq.	360 "	

In the sub acute form calomel proves beneficial in small doses. Local tumors should be crucially & deeply incised and washed with carbolic acid or creoline Sol.

It has been proposed to inoculate all animals at an outbreak with the bacillus of erysipelas which is said to be antagonistic to the bacillus anthracis.

Protective inoculation procures immunity for one year. Some animals have a natural immunity, the Algerian sheep being one so favored, except by inoculation of large and strong doses.

Horses are with difficulty made immune. Sheep and cattle attain a very marked immunity but it does not last more than a year. French writers recommend the inoculation of sheep while German

writers condemn it because about 15% of those inoculated died because of the virus being of unequal strength

Inoculation in cattle is much more profitable.

Methods of using Pasteur's Virus:—  
The bottle not to be opened until ready for use. A syringe holding one gram and divided into eight spaces should be used. Fill the syringe and inject one space under the skin inside of hind leg of sheep, wait 4 days and inject another space.

In cattle inject 2 spaces behind the shoulder. Pregnant cows and being omitted

# Black Quarter

Synonyms -

Black Leg, Quarter Ill  
German - Rauschbrand

French - Charbon Symptomatique or  
Mal de Cuissé -

It is a bacterial disease of cattle caused by an anaerobic bacillus, which multiplies locally causing extensive alterations of the parts, and is mostly fatal in its results.

This disease used to be classed as a form of anthrax but is no longer, classified as such.

It is enzootic in certain districts and localities, and generally occurs from June to November, and in swampy districts.

The symptoms are similar somewhat hard to distinguish from malignant Oedema.



It does not affect calves ~~are~~ they are not fed on herbage.

Immunity from an attack lasts, and old animals raised in an infected district are generally immune.

Some animals have complete immunity, as dogs, swine, cats, rabbits and man. The susceptible ones are cattle, sheep, goats and guinea pigs. The diseased flesh may be safely fed to dogs, swine and people. It when inoculated into horses the virus only produces local irritation.

The bacillus is called the *Bacillus Chauvaci*, after Chauveau who discovered it. It is anaerobic, club shaped, and about 5 to 15  $\mu$  long. <sup>Reported</sup> Bacillus found in the tissues and can live in the blood. It forms gas, and contrary to the anthrax germ ~~no~~ spores in the body, grows at

The ordinary Temperature of The room  
 liquifies gelatine, and has great  
 power of resistance. Putrefaction  
 has no effect on it, but it <sup>(The virus)</sup> is  
 destroyed by corros sub 1:1000 or  
 acid Carbohic 1:50 - Thymol is a good  
 disinfectant. The germ effects The  
 system by a wound deep enough to  
 reach the connective tissues. The  
 incubative period is from 1 to 5 days  
 Generally about 2 days.

### Symptoms or Lesions.

- (1) Crepitating tumors
- (2) Swelling of Lymphatic Glands.
- (3) Lameness

(1) Crepitating tumors - The swelling begins  
 as a small sensitive tumor and  
 extends until it may cover all of the  
 body. When pressed it gives a crep-  
 itating sound from the gasses in  
 it. The central part becomes dry

and later cold and gangrenous, when opened a dark exudate flows out. There is loss of appetite, a high temperature, weakness, lameness or paralysis, violent colics sometimes, and great prostration as death approaches. A mild form may recover.

### Pathological Anatomy. —

Dry gangrene is seen over the tumor, the affected muscles friable and dirty brown or black in color. When a tumor is compressed gas & fluid with a disagreeable odor escapes. The lymphatic glands are engorged. Spleen normal, blood in the intestine, hemorrhage in the lungs, heart and pericardium when tumors are situated on the thorax.

## Differential Diagnosis ~~of~~

Tumors crepitating while in anthrax.  
They are solid & contain no gas.

The blood and spleen are also normal in Black Quarter & not in Anthrax.

The bacillus is club shaped and motile, but in anthrax has square ends and not motile and does not form spores in the body.

In Malignant Oedema They are thick rod like & motile but not club shaped. Inoculations of Anthrax virus in the skin produces the disease, but has not this effect with Black Quarter virus. Guinea pigs are susceptible while rabbits are immune. Anthrax and Malignant Oedema kills both.



## Treatment -

is mainly preventative, by fencing the pastures &c. The tumors should be opened and treated antiseptically.

Vaccination means the use of attenuated virus

Inoculation the use of strong virus

Vaccination has been practiced successfully follows:-

### Preparation of Virus -

100 grammes of affected muscle is dried at  $42^{\circ}\text{C}$  then powdered & mixed with 80 grms. of water. This mixture divided into 12 parts & placed in an incubator. Half of these parts being kept at  $100^{\circ}\text{C}$  & the other half at  $80^{\circ}\text{C}$  for 6 hrs.

To inoculate take  $\frac{1}{10}$  gram. of dried mixture which was kept at  $80^{\circ}\text{C}$  & mix with 10 grms. water. This then strained through fine linen, and injected about 3 widths of hand from the root of the tail. The needle being inserted from below up and

3 inches deep. Place The Thumb over  
the wound and with The other hand  
rub The mixture into The connective tis-  
sue.

The next inoculation is made with the stronger virus in 6 days later, a little lower down the tail.


[illegible]

Jan'y. 3, 1893.

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# Epizootic Disease of Wild Animals and Cattle.

German synonym = Milch und Rinder-  
scuche is a milder form than  
Rinderpest

Both caused by a germ having the  
same appearance under the micro-  
scope  Germ under microscope, stained by Aniline dye

It is a bacterial disease effecting  
many species & is characterized by  
external swellings or hepatization of the lungs.  
It was first seen in the Royal Park  
in 1878 & affected <sup>wild</sup> hogs & deer, it was  
thereafter communicated to tame cattle.  
Exanthematous form -

External swellings are seen  
in various parts of the body, about the  
head, jaw & neck & down the body - They are  
of an inflammatory character, hard or  
edematous. The swelling may be 6 to 8  
inches thick. Stomatitis & pharyngitis may  
accompany this form & cause death.

by suffocation. Show colic & pain  
strain & lie down constantly in  
the later stages.

### Pectoral Form

The lungs are involved &  
generally seen in wild animals.

The symptoms are like pneumonia  
Animals may live 5 or 6 days

### P. M. Changes

In the Exanthematous form the swell-  
ings contain serous or gelatinous material  
of a yellow color.

Lymphatics enlarged & infiltrated  
with serum & blood. The mucous memb  
thickened & in folds & sometimes have a  
croupous exudate. Hemorrhages in all  
parts of the body.

Differs from Anthrax in that the  
spleen is normal in appearance & the blood  
is normal in color & character as in heal



### P. M. in Pectoral Form.

Hepaticized lung, the pleura thickened & inflamed, and a crumpeous exudate often present. As much as 30 gts of fluid is sometimes seen in the thoracic cavity.

### In The Intestinal Form.

Mucous membrane swollen, desquamated epithelium, the contents being bloody. In the acute form the animals die suddenly.

This disease has not been communicated to man so far. But communicate from animal to animal by direct contact. List of Germans first described the germ. Differential Diagnosis - from Anthrax -

Blood & spleen normal & absence of bacillus anthracis. It is communicable to pigs which are immune to Anthrax. Sheep resist small doses but die from same anth. anthrax virus. It generally affects the lower of lungs, while pleura pneumonia affects post. apex.

Pleura Pneumonia also develops more slowly.

The prognosis is not favorable about 50% dying

Treatment -

Medicinal not successful.

Use proper sanitary methods, such as isolation + prevent people and animals from carrying it.

Jan'y. 6, 1893.

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## Fowl Cholera

French = Cholera des poules

German = Geflügelcholer

This is a bacterial disease affecting all poultry and domesticated fowls and also some wild birds.

It was first seen in Lombardy, but has been seen in all countries in late years. Pasteur by his investigations of this disease discovered the method of attenuation virus. The excrements are very virulent and contain the germs in large quantity. The contagion is taken by the food or drink or it may enter by a wound, but not commonly. The germ is oval in shape, resembling that of Rinderseuche somewhat in appearance. As well as entering the alimentary tract it may enter the respiratory by the medium of dust &c in air. It is generally introduced by

new fowls, birds or rabbits.

It may be communicated to rabbits or mice by inoculation with a very small quantity of virus.

Guinea pigs are not very susceptible. The germs multiply locally but do not penetrate into the body or blood stream as they are anaerobic in character.

### Symptoms.

(The average period of incubation is 8 days)

Loss of appetite, yellow color of excrement at end. In normal excrement one end is white, which is due to the kidney secretion, while the other is natural feces. Later diarrhea follows, the excretions being yellowish green towards death.

The temperature rises from  $110^{\circ}$  to  $112^{\circ}$ . The wings droop, and the bird draws itself into a ball, and strays off by itself.



Becoming sleepy and drawy.

The crop inactive & filled with food. The comb loses its red hue and becomes white or pale.

### Pathological Anatomy -

The superficial vessels are bloodless, Liver enlarged and soft. Gall distended with dark bile. Cloaca streaked with blood. Capillaries of mesentery distended. Spleen normal. Pericardium distended with effusion. Lungs congested but not inflamed. Worms seen in tissues.

### Pathology -

It is caused by an oval bacteria which is not motile. It does not grow on potato and is destroyed by drying, & disinfectants. Rabbits die in from 2 to 48 hrs when inoculated. It only produces an abscess at point of inoculation in man.

-guinea pigs. The flesh is said to be innocuous when eaten. The germ causes death by forming poisonous alkaloids

Prognosis -

Unfavorable as 90 to 95% die

Preparations -

The houses should be cleaned & disinfected with corros. sub., acid carb., or sulph. acid solutions. The dead should be burned and the sick separated from the well. One attack confers immunity or by inoculation the same result is obtained. The wing being chosen for vaccination. It is said that  $2\frac{1}{2}$  albumen from an egg from an infected fowl, causes immunity when inoculated. As it contains alkaloidal poison

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" - " Jan'y. 10, 1893 - "

## Hog Cholera -

synonyms -

English = Swine Fever

German = Schweinepest

French = Pneumonie Infectieuse

## Swine Plague

synonyms -

English = Pneumo Enteritis,

German = Schweinesauke.

French = Pneumo Enterite.

Both are epizootic diseases of swine caused by a specific bacterium which is similar to the septicæmia one of mice. These diseases were considered the same until the investigations of the Bureau of Animal Industry in 1886, when it was proven that they were different, but often existed together. In 1885 Loefler of Germany described the germ as resembling that of mice septicæmia.

-77-  
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The Hog Cholera germs exist in pairs, are oval in shape, and very motile, they stain at the end first, leaving a clear space in center. If the staining is continued, the germ stains throughout.

Hog Cholera is strictly a contagious disease and is more virulent to young pigs. The period of incubation being from 4 to 20 days.

The germ enters by the digestive tract, by means of the food and drink or sometimes by means of the inspired air.

Symptoms—

not plain at first. Acute cases die suddenly. The temperature ranges from  $105$  to  $107^{\circ} F.$  Bowels at first constive, followed by a foetid & very fluid diarrhoea. The respirations are quickened, and a cough is present.



The animals have a stupid appearance, grow weak and when moved have a tottering gait. The skin on surface of the belly, neck, &c., becomes reddened, and an eruption follows later, accompanied by a desquamation of the epidermis. The eyes are watery, and the lids become gummed by the discharge, following later.

### Pathological Anatomy—

In the acute form abundant hemorrhages are seen on the surfaces of internal organs, the spleen being engorged and enlarged. The lymphatics are also enlarged and reddened. Hemorrhages in the lungs, liver, kidneys, and mucous surface of the stomach & intestines. The intestinal contents also bloody. In addition to the above <sup>symptoms</sup>, in a milder form, in the chronic form.

of disease, Large ulcerations are seen in the intestines, most commonly near the ilio caecal valve, caecum & etc.

The ulcers are projecting, yellow or black in color and have ragged edges

### Swine Plague

might be classed as a contagious miasmatic disease, The germ enters by the respiratory Tract and only differs in appearance from that of St. Cholera, in that it has no flagella and is not motile.

The annual loss in the U.S. from the two diseases is estimated at about \$10,000,000 to \$20,000,000

### Symptoms-

Pneumonic, from inflammation of lungs, breathing more labored and cough more

frequent than in St. Cholera  
The course of the disease may  
vary from 1 to 2 days to 1 to 2 weeks

### Path. Anatomy

Primary localization in the  
lungs. Large caseous masses, re-  
sembling tubercle are seen, with  
fibrinous deposits on the membrane.  
Granular deposits are seen in  
the intestines

### Differences in the 2 germs -

St. Cholera germ motile & S. Plague not  
" " " fatal to rabbits & guinea pigs &  
S. Plague to pigeons in addition  
Killing the <sup>plague</sup> germ & spraying with it  
does not produce disease  
Both produce disease when inoc-  
ulated. S. Plague germ will not grow  
on potato while other will.  
St. Cholera germs hardy & Plague germs  
delicate

## Prognosis-

The loss depends on the virulence. When very virulent 90 to 95% die. Most die in the early part of an attack.

## Treatment-

must be of a sanitary nature.

Move all animals to high ground & prevent men dogs &c from carrying the contagion. Move the well from the sick and disinfect thoroughly with lime, acid carb, acid sulphuric or corros sub.

Nearly all stock yards are affected and the disease is often contracted here or sometimes at fairs &c.

To prevent, disinfect stock cars, & slaughter diseased & exposed animals & burn the carcasses.



Jan'y. 13, 1893.

# Contagious Pneumonia of Horses - Synopsis -

(1) Oedematous Pneumonia

(2) Pleura Pneumonia Contagiosa  
Equorum

(3) German = Brustseuche

(4) French = Pleurapneumonie Contagieuse  
du cheval

This is a contagious inflammation of the lungs and pleura of horses. One attack conferring immunity which lasts several years, or all of the time of the animal. Seen in stables containing a large no. of horses, and more frequent in winter than summer. Attacking young, & debilitated animals before older ones. Attacking a large at first, later is slower in progress. Period of incubation 8 to 14 days.

## Symptoms -

Weak when driven, loss of appetite, rapidly increasing fever with shivering, circulation accelerated & weak. Mucous mem.  
pale & yellow or yellowish red  
 In Influenza said to be reddish violet or brownish red

(1) Lobular -

(2) Lobar - milder

(1) Lobular form affects the lobules - circumscribed centres of inflammation seen - cough & rapid breathing - If small area, not discoverable by auscultation

Later, centres become confluent - generally seen in left lung -

Rusty discharge from nose, which dries & forms crusts.

Friction sounds when pleura involved - Hydrothorax sympt -

Inflammatory centres break down giving tympanitic sounds over them. Favorable termination can only be expected if no complications are present.

## (2) Lobar -

Milder form & lobes affected. Discovered by the extent of dullness. Begins in ant. & inf. portions and generally confined to one side (left) showing general pneumonic symptoms. When other organs are complicated have, colic, diarrhoea, hemorrhage & c when intestines - Haematuria from kidneys. Meningitis & cerebral paralysis from brain. Laminitis, arthritis, carditis & c according to the organs affected.

Typical form in strong horses & the period from 5 to 8 days.

Abortive form in old animals - 1 to 5 days arrested at period of congestion.

Chronic form from caseous centres,  
degeneration occurs sometimes &  
is then very virulent

P. M. Lesions -

In Lobar -

Multiple centres of inflammation  
accompanied by pleurisy and  
parenchymatous inflammation at the  
base of the lungs. Areas hepatized,  
red - surrounded by white zone of  
leucocytes - These break down &  
form cavities, the walls of which are  
formed of fibrous tissue.

There may be adhesions between the  
lungs & thorax if chronic and a red-  
dish brown liquid (30gk) in the cavity  
Parenchymatous inflammation of other  
organs

Etiology -

Contagion enters by respiratory tract  
It is more enzootic than epizootic



## Treatment -

Enveloping body in cold cloths &  
cold injections  
Antifebrine &c  
Digitalis - camphor, caffeine, hyocyamine -  
counter irritation to chest &c  
Calomel when intestines involved  
Sanitary measures of great importance.

## Pneumo Enteritis -

A disease showing symptoms like  
the preceding - and said to be caused  
by germs entering from the food. The  
organisms being ~~being~~ streptococcus & a  
diplococcus - It may localize in  
any part but generally in lungs & intest  
ines first

## Treatment -

Good food moistened with acid-  
ulated water to destroy the germs - Anti-  
pyretics & eliminatives as Tartar (creamy)

Jan'y 17, 1893.

## Influenza

Fr. = Pseudo-typhus Darmseuche

Fr. = Fièvre typhoïde

This is a contagious disease with a very high fever.

The last European epidemic was seen in 1881 to 1883.

### Etiology -

It is developed as a result of contagion - The germ is not known. Said to be disseminated by the expired air.

The incubative period being from 4 to 7 days -

The circulative apparatus, nervous system, respiratory & digestive tract & in fact all the organs may be affected.

### Symptoms -

Rise of temperature - Stationary for 5 or 6 days and then it decreases rapidly - pulse accelerated - mucous membranes

violet red which is said to differ from contagious pneumonia, in that the latter shows a yellowish membrane nervous depression & weakness.

And many symptoms according to the organs complicated

Duration, 6 to 10 days.

P.M. —

mucous memb. of stomach & intestines congested, thickened and containing a gelatinous matter

Respiratory organs reddened, swollen & congested

Degeneration of other organs —

It is said to be distinguished from contagious pneumonia from affecting the digestive tract first & the color of the mucous memb. Loss 3 to 10% from it.

Treat —

Good care, ventilation & good food &c

~~to organs~~

Jan'y. 20, 1893.

Glanders & Farcy -

Latin = Malleus Farcina Equi

Fr = Morve et Farcin

Gr = Rotz, Rotz Krankheit -

These two diseases are one and the same, They are contagious, being due to a bacillus, and are transmissible to man under certain conditions.

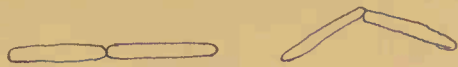
The disease was first described by Aristotle -

The form called Glanders affects the respiratory and adjacent tissues, while Farcy affects the subcutaneous tissues and lymphatic glands.

The Bovine species are not susceptible to the disease. While all horses are not equally susceptible



## Etiology -



The bacillus causing the disease, is from  $\frac{1}{3}$  to  $\frac{2}{3}$  The diameter of a corpuscle, it may be straight or curved, and rounded at the ends, and united in couples by the ends. It is best stained with Methyl blue and will not grow outside of the body except by artificial means. It resists putrefaction for 2 or 3 weeks, but  $176^{\circ}F$  kills it in 5 minutes, as does 1:5000 corros sub.

The germ is found in the blood in the acute form, or when the internal organs are affected, and it may enter the system by the inspired air or by wounds.

It may pass from the mother to the fetus

The Chronic form is accompanied by an visciduous discharge from one or both nostrils. It is of a thin mucous character, intermittent, transparent & greyish in color. As the disease advances it becomes more viscid, yellowish grey and later yellowish green.

Hemorrhages may occur from rupture of the blood vessels. Nodules appear on the mucous membrane. These later burst & become ulcers, which may heal & leave cicatrices.

The inferior maxillary glands on the same side as the discharge may be enlarged and adhere to the bone.

The disease may be accompanied by an intermittent febrile condition.

When the lungs are affected, it may lie dormant for a year or more. The disease existing for a period of 6 or 7 years.

In Farcy the lymphatic glands and vessels are nodular, and followed later by a discharge. This form is due to embolism from particles of matter entering the circulation and lodging in the capillaries.

Acute form -

This form occurs in about 10% of the animals affected. It shows the characters of infectious septicaemia and may follow the chronic form.

It begins with chills, intense fever (107%) mucous purulent discharge from the nostrils, the mucous membrane being covered by nodules and ulcers which become confluent and discharge a fibrinous exudate, which may show in 1 or 3 days from the first symptoms. The added symptoms <sup>of farcy</sup> may be present. Diarrhoea is abundant, the course of the disease rapid, death occurring in 13 or 14 days.

## Symptoms in Man -

The virus is generally introduced by the respiratory tract, lips, eyes, or wounds. The period of incubation from 4 to 5 days. The parts affected are swollen and painful, the lymphatic glands leading away inflamed. Discharge from the nose, ulceration of the mucous membrane, and swelling of the joints. When a person is susceptible he may die in a few hours, if a large dose is received. May sometimes live for months & years in the chronic form.

When the disease is local, the parts may be cauterized deeply and effect a cure if done before the germ is disseminated.



## T. M. - (Principal lesions)

2 forms are said to exist, but are hard to distinguish apart

(1) Tuberculous G. characterized by  
ulcers & nodules

(2) Diffuse G. - by thickened m. m. &  
and diffuse swellings

Tuberculous is generally seen in the upper part of the tract. Nodules are seen, formed of lymphoid cells & containing a bacillus & surrounded by a red zone. The nodule degenerates & forms an ulcer, with a ragged edge & grey bottom. They occur in masses, or are isolated. They are found in the sinuses, guttural pouches, larynx, trachea, bronchi & tubes.

Nodules may occur in the lungs from embolism. They are generally conical in shape with the base toward the periphery and generally superficial.

They may cause circumscribed pneumonia, bronchitis, peribronchitis, bronchiectasis or atelectasis. Dense fibrous tumors or cavities may form as a result of large areas being affected.

May find lesions in the brain, kidneys, liver, spleen & testicles.

Table showing % having different organs affected, in 3317 Glandered horses

1529	Nasal lesions
294	Lung "
218	Skin "
846	Nasal & Lung "
217	" " & Skin "
164	" & Skin
49	Lung & Skin

Diagnosis by the following ways:-  
1) Clinical Examination

- 2) Examination of nose with rhinoscope
- 3) Trephining maxillary sinuses
- 4) Excision & examination of max or other lymphatic glands
- 5) Artificial production of fever which changes to acute form (not reliable)
- 6) Auto inoculation or malleosation, with ~~the~~ own discharge
- 7) Inoculation of other animals, as-  
(a) Ass - (b) horse - (c) guinea pig (male)  
    To inoculate guinea pig in belly  
    1st. week an ulcer forms at the seat of inoculation  
    2<sup>nd</sup> week - the testicles are indurated & may have a purulent arthritis and discharge from the nose & other lesions similar to those seen in the horse!
- 8) Examination for bacilli

(9) Injections with Mallen  
 which produces inflammatory swell-  
 ings at the point of inoculation  
 A suspect should have the temper-  
 ature taken every 2 hrs during a  
 day before inoculating. And after  
 inoculation the same, so they can  
 be compared.

The Temperature may rise  $2\frac{1}{2}^{\circ}$  &  
 begins in 4 to 8 hrs. after & disappears  
 in 36 hrs.

A spontaneous cure sometimes  
 occurs

Treatment -

Destroy & disinfect, every  
 thing that contacted the animal.



Feb 3 1893

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## Tuberculosis -

Synonyms -

English { Phthisis pulmonalis.  
            { consumption

German { Tuberculose  
           { Perlsucht

French { Pomme d'ore  
          { Tuberculose

is - a contagious disease  
characterized by tubercles which  
- are caused by the bacil. tuber-  
culosis.

As early as 1343 laws were in  
force in Germany prohibiting the  
sale of tuberculous meat.

In 1865 Villinham first demon-  
strated the inoculability of tuber-  
culosis

In 1882 Koch isolated and  
cultured the bacillus

It is common in swine & poultry &  
less so in horses, sheep, & dogs

Wild animals contract it when confined. It is said that  $\frac{1}{8}$  to  $\frac{1}{6}$  of the population may die from it of milk cows from 3 to 5%

" beef cattle 1 to 2 in every 1000

The disease in fowls is the same but the physiological characters differ from the change in temp. &c

### Etiology -

Bacil. tuberculosis is rod shaped

multiplies by fission produces spores <sup>Don't mot 1894</sup>

They are found in & between cells.

Retain their vitality in water for from 2 weeks to 4 months

A temperature of  $185^{\circ}F$  will kill them in milk

or 5% sol of Pot. Iod or corros-  
sub 1 to 1000

Neither subrefaction nor freezing have any effect on the bacillus

The disease is generally contracted by cohabitation, the germ being disseminated by means of the air, sputa &c, it enters by the ~~Respiratory~~ or digestive Tract or by wounds. The mucous membrane need not be broken to gain entrance. It may cause local disease or enter into the lymphatics & be carried back into the body.

Calves may contract it from the milk, or the bacillus may pass from the mother to the foetus and develop when the calf has attained its growth. Then it is hereditary.

Certain predisposing causes may be mentioned, as, debility, catarrhal affections &c.

## Symptoms -

### (1) Pulmonary form -

short cough, rarely a discharge from the nose, foetid breath and general abnormal <sup>lung</sup> symptoms.

Sometimes Tympanitis from pressure on the oesophagus, by the tuberculous mediastinal lymphatic glands

Bloody urine from diseased lymphatics in kidneys.

### (2) Pearl disease or Tubercles on serous membranes

Similar when the pleura is affected. When the Peritoneum, Perpetual oestrus, &c.

### (3) Nervous Syst -

With resulting sympt.

All parts of the body may be affected, with & show symptoms according to the parts affected



How tubercles are formed-

Bacillus alights, causes irritation & proliferation of connective tissue cells. White blood corpuscles congregate & surround the germ, the mass becomes surrounded by a fibrous capsule, with a blood vascular zone around it, but no vessels in it. It may degenerate or calcify from this cause. The nodule is at first grey & solid, and a no. may unite & form masses, & the resulting mass break down.

Statistics as to the per cent of organs affected -

Lungs	75% of cases
Pleura	55% " "
Peritoneum	48% " " "

Bronchial & Mediastinal Lymph. glands	29% " " "
Liver	28% " "
Spleen	19% " "
Uterus	18% " "
Udder	1% " "
Ovary	1% " "

## Diagnosis with Guinea pigs -

Inoculate two - One in the abdominal cavity & the other in the skin - If one dies from septicaemia other may be kept & P.M. held when the disease has had time to produce lesions internally.

## Diag. with Tuberculin

Dose -  $\frac{3}{10}$  to  $\frac{5}{10}$  grms.

The temperature should be taken before & after inoculation the same as in using mallein (which see)

A rise in temperature from  $2\frac{1}{2}^{\circ}\text{F}$  up may be looked for in from 15 to 20 hrs. The rise is due to the reaction, and it must be at least  $2\frac{1}{2}^{\circ}\text{F}$

Actinomycosis &c may cause a rise

Treat -

Destroy & disinfect with corrosive  
Sulphur 1:1000

Only when an animal is in good condition & disease confined to one org. can meat be used.

Feb'y 14, 1893.

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## Contagious Pleura Pneumonia

Synonyms -

(1) Peripneumonia exudative con-  
tagiosa

(2) Lung Plague

(3) Epizootic Pleura Pneumonia

Fr = Peripneumonie Contagieuse

Gr = Lungenseuche

It is a contagious  
epizootic disease of bovines, occa-  
sioning intense inflammation of the  
lungs and pleura

The disease is supposed to have  
existed during Aristotle's time, how-  
ever in ~~that~~ not described with cer-  
tainty until 1713 and during this  
year was seen and described thor-  
oughly in Switzerland, and several  
other European countries

First seen in U. S. in 1843. An affected  
cow being brought to Brooklyn  
The U. S. was freed from it in Sept. 1872

## Genl Characters

It is confined to bovines and has an incubative period of from 2 weeks - to 2 mos.

## Etiology -

The germ has never been discovered - the contagion may be carried some distance and the animals do not have to come in contact in order to transmit it

## Symptoms.

### "Acute

seen in hot weather -  
rapid breathing - groans during expiration - elbows turned out & back arched - head & neck extended - rumination stopped & later diarrhoea fatal in 1 to 3 weeks

An extreme mild form may exist and is quite dangerous as the animals recover and the disease may be transmitted and become



very virulent in other animals

The symptoms shown in this form are: a cough for a week or so and the animal recovers

## (2) Sub Acute

Cough - eat some - Tenderness when pressed between ribs - witheriness look - temperature 103 to 105° F.

Genl. pneumonic sounds in Thorax -

They may die in from 3 to 8 weeks or seemingly improve or may improve entirely & get well in rare cases

An encysted tumor is present in the lungs and it may break down or dry up by absorption of its liquid contents and leave only a scar.

They remain standing as long as they have strength and when they go down, lie on the affected side. This to relieve the healthy one. 40% of exposed animals contract the disease & 1/2 of these die.

88  
Pathological Anatomy -

The thoracic cavity contains exudate, with fibrinous materials in it. Diseased lobes are enlarged & solid. Interlobular tissue thickened and infiltrated with a yellowish material which solidifies later & becomes fibrinous. The connective tissue around the bronchial tubes, vein & artery are likewise thickened. And the alveoli filled with blood or fibrine, which gives the diseased portions weight and solidity.

The diseased portions vary in color according to the amt. of exudate and inflammation present. Some may be "dark brown or black" or <sup>(2)</sup>Light brown, and some <sup>(3)</sup>grey. This varied marbled appearance characterizes this disease from all other pneumonias.

In others the hepatization is all the same age.

A thrombus may be seen in the veins, which is caused by an inflammation of the endothelial lining. The plug being adherent to the vessel wall. (characteristic)

There is no adherent plug in the arteries, but a soft one may form after death.

The contagium enters by the bronchial tubes & may pass through and into the walls of veins or into the interlobular tissue, causing an inflammation, with subsequent clotting of the vein and a consequent hemorrhage into the tubes & alveoli from impeded circulation. This accounts for a lobule dying - from non-nourishment. The contagium enters at different periods causing the different ages of hepatization. A wall of fibrous tissue forms around the diseased part from migration of white corpuscles.

Feb, 15 / 1893

When a large part of a lung is ~~is~~ hepatized, in an animal in an infected district it is almost conclusive evidence that the animal has Contagious P.L. Pn.

When an isolated suspicious case is seen be sure and learn the history of the animal and do not confound with "tuberculosis,"

(2) Vermiform bronchitis - which occurs in adults as well as young - The lung differs in not being hepatized - It is also collapsed & drapsical - and worms are found in the tubes, but not always in those leading to a collapsed portion, as they migrate to a healthy part.

(3) Croupous differs in that the hepatization is the same throughout & no thrombi present.

(4) Broncho pneumonia -

Lower & ant part of



lung affected - no pleurisy - no  
macbling - It is a lobular disease  
 hemorrhage and exudation seen  
 in alveoli

(v) Interstitial Pn -

Lung tissue soft & spongy -  
 & all the same color - no pleurisy

Inoculation

gives a certain degree  
 of immunity, but is dangerous  
 as the inoculated animal may  
 spread the disease.

Lymph is squeezed from  
 a portion of lung (acute stage) and  
 inserted into the <sup>skin of</sup> tail by means of  
 a lance or drawing a piece of yarn  
 through which has been previously  
 soaked in the lymph - 2/3 may die  
 from the operation

It appears safe to use flesh  
 from regular cases without any com-  
 plications. (Excuse me, I don't eat meat)

Feb'y. 17, 1893 -

- |                           |                                    |
|---------------------------|------------------------------------|
| (1) Southern Cattle Fever | } Synonyms for<br>the same disease |
| (2) Texas Fever           |                                    |
| (3) Distemper             |                                    |
| (4) Murrain               |                                    |
| (5) Red Water             |                                    |
| (6) Splenic Fever         |                                    |
| (7) Spanish "             |                                    |
| (8) Acclimation "         |                                    |

Description found in cattle Book

Feb'y 21, 1893 -

Actinomycosis

Refer to Gov't Cattle Book

Feb'y 25-1893-

93

Variola Equina or Horse Pox

" Vaccinia " Cow "

" Caprina " Goat "

" Suilla " Porcine "

Variola effects nearly all animals and each species has its own variety.

It is a contagious disease characterized by fever and eruption on the skin.

It is quite fatal to sheep - 1-million being lost in France in 1819.

1793 Jenner transmitted cow pox to man. The operation being termed vaccination from vaccinia the name of the disease in cows. Cow & horse pox are said to be identical

Chamvea thinks small pox differs from Cow Pox

Contagion exists from exhalations and discharges

One attack generally confers immunity-

→ Sheep Pox -

~~Is the most serious form of variola. The virus retaining its vitality for 5 or 6 mos.~~  
The disease is introduced by sick animals or by indirect means. This form of disease is communicable to the horse and ox and vis-a-versa.

The contagion is volatile in sheep pox and fixed in cow pox.

The period of incubation is from 3 to 7 days - Eruptions are seen over the skin - accompanied by catarrh - salivation, cough, & diarrhoea. Pustules sometimes unite & form gangrenous patches - Lymph glands swell & abscesses form.



Pneumonia, laryngitis may be complications

When it runs a regular course the period of duration is about 3 wks. Loss, 10% in mild and 50% in severe cases.

### Horse Pox



The horse is susceptible to sheep, cow and small pox

The eruption generally first seen on the heels, in the region of the pasterns - The disease being contracted from the blacksmith's apron, being carried by this means.


The eruption is sometimes seen around the lips & mouth. Outagious Pustular Stomatitis is thought to be a form of variola

Veneral exanthema is also said to be a form of cow & horse pox and shows the following symptoms: vesicles & pustules


on the organs, no general fever & recovery in 3 or 4 weeks

May have aggravated cases.

### Livine Pox

 is contracted from the straw from beds of small pox patients and from cow pox - Eruption on neck, back, & head.

### Cow Pox

 Pustules on Teats & udder - The teats swollen & red - The vesicles mature in 10 days, and this is the time at which they should be utilized for inoculation

The contagion is carried by milkers and spreads slowly.

The total duration of the disease is about 20 days

# Course - 5 periods -

- (1) Incubation 1 week
- (2) Initial period 1 - 2 days
- (3) Eruptive " 6 - 8 "
- (4) Suppurative " 2 - 3 "
- (5) Desiccative " 5 - 6 "

accompanied by  
fever symptoms

The eruption begins with red spots resembling flea bites - These change to papules and later to vesicles the size of a pea. A depression occurs in the centre called the umbilicus and is a pathognomonic symptom. When the contents are viscid they are right for inoculation. Suppuration follows & the depression disappears. Stage (Depression) secondary fever ~~vesicles~~ when pustules appear - Crusts form during the latter period. Gangrene sometimes occurs when the vesicles become confluent - from abnormal course.

Feby 28, 1893.

## Treatment

Wash with sol. creoline

Give easily digested food

When the genital organs are affected  
The animals should not be bred  
for some time after

Sheep are sometimes inoculated as  
follows - Take limpid lymph &  
inject into internal surf of ear  
or under tail

## Epizootic Abortion

The infection is conveyed  
by the litter or by switching the  
tails

Nocard thinks the organisms  
multiply between the chorion &  
maternal membrane

This renders the mucous mem-  
brane acid which explains the



cause of sterility as the spermatozoa cannot live in an acid medium

This disease is seen in sheep & goats sometimes but not as frequently as in mares & cows

It most frequently happens in cows which have been pregnant 3 to 7 months

And in mares 3 to 9 months

Symptoms -

~~At first~~ sometimes redness and a discharge is seen followed by abortion. And again abortion occurs suddenly without any premonitory symptoms

Prevention

~~At first~~ Animals should not be introduced from an infected district. Males that have been serving infected females should not be used on others.

Disinfect the premises thoroughly preferably with Acid Sulph in a dairy herd its poisonous affects are less than corros-  
sub.

Afterbirth must be burned & the uterus washed with the following Rx -

Aquae (pur)	XX qts
Glycerini	3 $\frac{1}{4}$ ss
Spt Rect	3 $\frac{1}{4}$ ss
Corros Sub	3 $\frac{1}{4}$ ss

M

Above is by Givcard

Better to dilute to  $\frac{1}{2}$  strength as some complain of it being too strong.

## Distemper in Dogs

This is a contagious febrile disease affecting dogs & cats

One attack confers immunity generally for a life time

It is transmitted by cohabitation The period of incubation being about 4 to 7 days

The Bacterium has not been discovered. The virus is either fixed or volatile and occurs in the mucous secretions and blood pustules of the skin.

The disease is said to affect foxes, wolves, hyenas & jackals

### Symptoms

The general symptoms are catarrhal inflammation of the eye, respiratory and digestive organs accompanied by an eruption & nervous symptoms

Complications may occur - Duration 8 days to 14 days

# Treatment

according to the symptoms shown  
If the respiratory tract be affected  
give inhalations of creoline

For the digestive organs calomel

" " Eye sol creoline or 2% Boric acid

" " Pruritus of " 2 to 5% sol. cocaine

" Vomiting - Opium

" Diarrhoea - gum arabic in cal.

" Cough - ammon. muriate in bitter almond

" Nervous Symp. - sulphonal, bromides & chloral

" Weakness - coffee, broth & strychnine



Nov 3<sup>rd</sup> 1893

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Dourine or

Maladie Du Coit

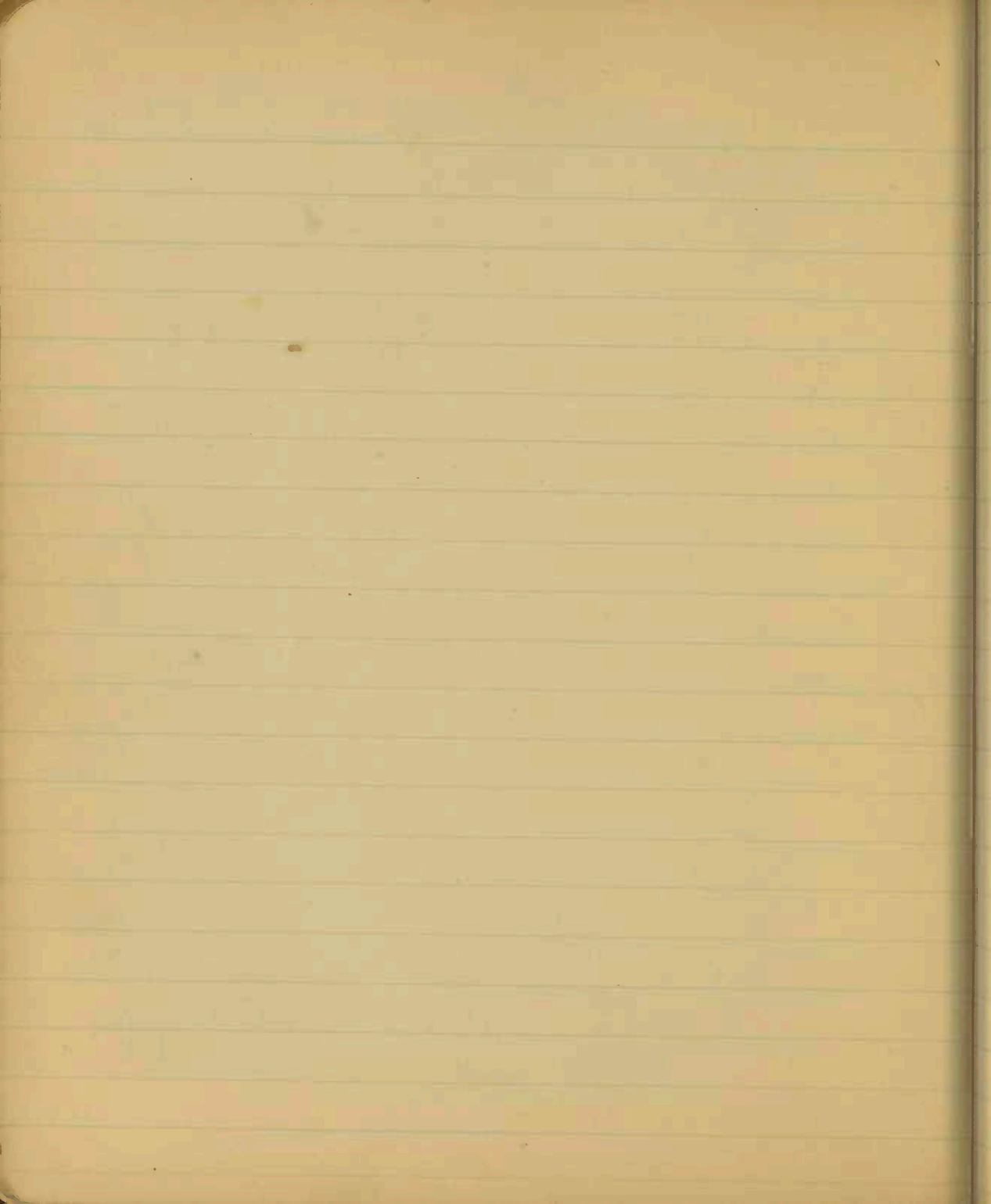
" venerienne

This is a specific malignant  
venereal disease of horses

It was seen & described in  
Prussia in 1796

Was first brought to Ill. by a  
French stallion in 1884. 400 mares  
were served by him & 63 contracted  
the disease - It was supposed to  
have been eradicated but an outbreak  
occurred in Nebraska last year ('92)

The disease is chronic in  
character & transmissible by inoc-  
ulation, localizing itself on the genital  
organs and later becoming generalized  
The active agent has not been  
demonstrated - It is generally transmitted  
by copulation





## Symptoms - in 1st Stage

### In stallion

Period of incubation 8 or 10 days

The symptoms are at first local on the penis & later become generalized. Swelling of the penis and sheath & testicles occurs. These swellings may disappear in a few weeks & to all appearances the animal is well again. However this is not the case as the disease is still in the system -

Later the scrotal & inguinal glands swell & abscesses form. Urination causes pain. The sexual desire remains unimpaired.

### In mare

Oedematous swellings of the vulva occur 8 or 10 days after infection - accompanied by sexual excitement. The mucous membrane is spotted with blood. A Discharge follows



The clitoris becomes swollen & erect. Loss of pigment occurs in the region of the anus & perineum. Only a small per cent of mares become pregnant and most of them abort.

Round or elliptical raised swellings of the skin occur & may disappear as suddenly. The swellings are due to inflammation of the deep layers of skin - Hyperaesthesia of the skin is shown by intense itching.

The gait becomes staggering and the posterior parts of the skeleton waste away. The appetite is retained for a long time.

A chronic form called Benignant is spoken of, it is however only Variola Equina.

## Pathological Anatomy -

Oedematous swellings of the parts - (Ulcers and erosions rarely occur from this disease <sup>but</sup> are frequently seen in Variola - Consequently the latter is sometimes confounded with Dourine) Abscesses & induration of the scrotum & testicles - The cord atrophied & ecchymosed - Spinal nerves the seat of fatty degeneration - The course is always chronic - The average duration of the disease is 6 to 12 mos. Occasionally a complete recovery occurs.

## Treat -

Locally - antiseptics & astringents  
Swellings incised and use counter-irritants

Bichlor Mercury & Pot. Iod. internally  
Counter irritants for spinal paralysis  
Castrate Stud -

No special laws for controlling the disease in the U.S.

Nov. 10, 1893.

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Epizootic Aphthae  
Foot and Mouth Disease  
Epizootic Fever  
Aphthous "

This is a specific epizootic disease generally affecting cattle and sheep, but may affect other animals. It is characterized by fever and vesicles in the mouth and on the feet.

It was seen in Switzerland 1809 and in England in 1839.

The contagion is the most diffusible of any of the domesticated animals. One attack does not confer immunity for any length of time. The sores caused is more particularly from lost secretion of milk - There is danger of transmitting it to man

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The contagion is fixed or volatile and may be conveyed by air or by direct contact. The virus is in the saliva, milk, excrements and liquid of the vesicles.

It possesses only moderate resistance and generally disappears from a stable in two months, but may remain a year or more. It is destroyed by boiling.

#### Symptoms in man

Fever - difficulty in swallowing  
blisters & eruptions in the mouth.

#### Symptoms in animals

High fever followed by the formation of vesicles & ulceration on the mouth lips & muzzle and above the hoofs and in the cleft.



Period of incubation 1 to 3 days  
 Blisters in 2 or 3 days which  
 enlarge to the size of a silver  
 dollar and sometimes become  
 confluent.

The epithelium desquamates  
 leaving red & sensitive erosions  
 The animal smacks its lips  
 continuously when these occur.

The milk becomes thick and  
 has a disagreeable taste, The  
 animal loses flesh rapidly  
 The teats in cows become affected  
 from licking them, The inflam-  
 mation may extend and cause paren-  
 chymatous inflammation.

The pharynx & larynx may become  
 affected by extending inflammation  
 The latter sometimes drops off.  
 Gastro intestinal irritation may be  
 a complication

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